AMENDMENT AND RESPONSE UNDER 37 CFR § 1.111

Serial Number: 09/649,827

Filing Date: August 29, 2000

Title: METHOD FOR ATTACHING A SEMICONDUCTOR DIE TO A SUBSTRATE

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REMARKS

Claims 36, 38, 39, 43, 44, 48, 58-60 and 62-63 are amended, claims 64-65 are added, and claims 34 and 35 are canceled without prejudice or disclaimer. Claims 36-60 and 62-65 are now pending in this application.

Claims 58-60 and 62-63 are amended to clarify the claims, respectively. These claims are amended to depend from a non-canceled claim and to conform the parent claim to provide antecedent basis.

Allowable Subject Matter

Applicant initially notes with appreciation that claims 35, 37, 51-60, and 62-63 were allowed.

Examiner Interview

Applicant acknowledges the telephone interview held on April 10, 2003, between the Examiner and Applicant's attorney, Andrew Peret, during which the specification, claims and pending § 112 rejections were discussed. Applicant's attorney and the Examiner agreed that Applicant would file a Response that referenced some of places where the rejected claims were supported by the drawings and specification.

Claim Objections

Claims 34 and 35 were objected to under 37 CFR 1.75 as being a substantial duplicate of claims 36 and 37, respectively. Applicant has canceled claims 34 and 35 such that this objection is now moot.

First §112 Rejection of the Claims

Claims 34, 36, and 38-50 were rejected under 35 USC § 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

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## Claims 36, 38-42 and 44-47

The Examiner states at pages 2-3 of the Office Action:

Claims 34, 36, 38-42 and 44-47 require that a polyimide substrate be used in combination with a hybrid thermoplastic and thermosetting material. The original disclosure however never clearly describes using a polyimide substrate in combination with a hybrid adhesive and applicant has not shown why the original disclosure should be read as describing this. As such, it is submitted that this was not described in the specification in such a way as to reasonably convey to one skilled in the art that the inventor(s), at the time the application was filed, had possession of the claimed invention, i.e. this is considered to be new matter. In particular, note that the description of the "hybrid adhesive tape" is apparently in the context of a separate and distinct embodiment of the "adhesive tape 40" and there is no clear description that this adhesive has utility with other embodiments, such as the tri-layer adhesive embodiments.

Applicant respectfully traverses the assertions and directs the Examiner's attention to FIG. 4, and Applicant's specification at page 10, lines 3-8, which illustrate and describe that adhesive 40 may be multi-layered with adhesive layers 46, 48 on both sides of an intermediate layer 50, such as a polyimide carrier film (see page 10, lines 23-24). The specification further describes many types of adhesive that may be used in adhesive tape 40 (see, e.g., page 13, line 23-25 and page 14, line 4-9).

Another one of the adhesives disclosed in Applicant's specification includes "a hybrid material having both thermoplastic and thermosetting components" as recited in claims 36, 38, 39 and 44. As an example, the Abstract describes a "[a] tri-layer tape . . . having a carrier layer sandwiched between two identical adhesive layers . . . wherein the adhesive is a hybrid material having both thermoset and thermoplastic components." Applicant also directs the Examiner's attention to page 14, line 22 through page 15, line 5 of Applicant's specification.

Since Applicant's specification and drawings disclose that (i) the adhesive layer 40 may be multi-layered with adhesive layers on both sides of a carrier layer; and (ii) the adhesive layer may be a "a hybrid material having both thermoplastic and thermosetting components" as recited in claims 36, 38, 39 and 44, Applicant respectfully submits that claims 36, 38-42 and 44-47 are properly supported by Applicant's specification and drawings.

Reconsideration and allowance of claims 36, 38-42 and 44-47 are respectfully requested.

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## Claims 43 and 48-50

The Examiner states at page 3 of the Office Action:

"Claim 43 and 48-50 describe that the CTBN/epoxy adhesive is the 'hybrid' adhesive. There is however no description of this in the original disclosure and in fact, the original disclosure would seem to contradict this as it explicitly describes that the CTBN/epoxy 'is a thermoset material that laminates at approximately 100 deg. C'."

Applicant has canceled claims 43 and 48 without prejudice or disclaimer. The rejection thereof is now moot.

# Second §112 Rejection of the Claims

Claims 34, 36 and 38-50 were rejected under 35 USC § 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. The Examiner states at pages 3-4 of the Office Action:

"The specification and above noted claims require an adhesive tape that is a 'hybrid material of thermoplastic and thermosetting adhesive' - it however is not clear that this material has been described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. In other words, it does not seem that sufficient information has been provided for the ordinary artisan to be able to determine what the structure and/or compositions of this "hybrid" tape are without an undue burden of experimentation. Note that there has been no indication in the original disclosure of what compounds are suitable and effective in this very specific and highly specialized bonding environment. Further, it is not even clear what is meant by 'hybrid' in this context - is it a mixture or blend of thermoplastic and thermosetting adhesives? Or is it a combination of thermoplastic and thermosetting materials in different layers? Or is it a new material of some other structure and/or composition? Lacking more detailed information in this regard, it is submitted that the ordinary artisan would have to resort to an undue burden of experimentation to determine what would work as a hybrid tape and the disclosure is thus considered insufficient to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention consistent with these claims."

Applicant respectfully traverses the assertions and again directs the Examiner's attention to Applicant's specification at page 10, lines 3-8 which references FIG. 4 and describes that adhesive 40 may be multi-layered with adhesive layers 46, 48 on both sides of an intermediate

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layer 50. As discussed above, the specification further describes many types of adhesive that may be used in adhesive tape 40.

A hybrid adhesive is described at page 14, line 22 through page 15, line 5 of Applicant's specification. The described adhesive includes "a hybrid material having both thermoplastic and thermoset components" as recited in claims 36, 38, 39 and 44. Applicant again notes that the Abstract in particular describes "[a] tri-layer tape . . . having a carrier layer sandwiched between two identical adhesive layers . . . wherein the adhesive is a hybrid material having both thermoset and thermoplastic components."

The specification and Figures describe and illustrate (i) that the adhesive layer 40 can be multi-layered with adhesive layers on both sides of a carrier layer; and (ii) that one adhesive which may be used includes "a hybrid material having both thermoplastic and thermoset components" as recited in claims 36, 38, 39 and 44. Therefore, claims 36, 38-42 and 44-47 are adequately supported by Applicant's specification and drawings.

Reconsideration and allowance of claims 36, 38-42 and 44-47 are respectfully requested.

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#### Conclusion

Applicant respectfully submits that the claims are in condition for allowance and notification to that effect is earnestly requested. The Examiner is invited to telephone Applicant's attorney, Andrew Peret, at (262-646-7009) to facilitate prosecution of this application.

If necessary, please charge any additional fees or credit overpayment to Deposit Account No. 19-0743

Respectfully submitted,

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<u>CERTIFICATE UNDER 37 CFR 1.8:</u> The undersigned hereby certifies that this correspondence is being deposited with the United States Postal Service with sufficient postage as first class mail, in an envelope addressed to: Commissioner of Patents, Washington, D.C. 20231, on this 15th day of <u>April</u>, 2003.

Amy morarty

Name

Signature